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EXAMINER	
ABELSON, RONALD B	

ART UNIT	PAPER NUMBER
2666	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/930,053	ALEXANDER ET AL.	
	Examiner	Art Unit	
	Ronald Abelson	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-9 and 14-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Chuah (US 6,408,001), and further in view of Gormley (US 6,967,937).

Regarding claims 1, 14, 17, 22, AAPA teaches MultiProtocol Label Switching 'MPLS' ([0005]) and a first and second protocol type (IP, Layer-2 MAC frames, [0003]) and encapsulated packets ([0005]).

AAPA teaches selecting a physical link from a plurality of physical links (packets for a given flow are transmitted on the same physical link, [0003]) based on one or more label values (Protocol ID field of the PPP header, [0004]) and transmitting the packet over the selected physical link (transmitted on the same physical link [0003]).

Although AAPA teaches MPLS and a first and second protocol type, the reference is silent on determining a protocol format in which a packet is formatted based on one or more label values in a header of a MultiProtocol Label Switching 'MPLS' formatted packet, wherein label values in a first range corresponding to a plurality of values indicate an encapsulated packet of a first network protocol type and label values in a second range indicate a second protocol type.

Chuah teaches determining a protocol format in which a packet is formatted based on one or more label values in a header of a MultiProtocol Label Switching 'MPLS' formatted packet (fig. 7 box 710, protocol field used to identify the network layer protocol, col. 8 lines 14-18, col. 9 lines 8-10), wherein label values in a first range indicate a first protocol type (range of values, IP telephony, col. 9 lines 8-10). Note the examiner corresponds the applicant's second protocol type with a protocol having a protocol field designated by values outside the range of values for IP telephony in the reference.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by incorporating the protocol field of Chuah (fig. 7 box 710) within the header of the transmitted MPLS packets, wherein label values in a first range indicate a first protocol type. This modification can be performed according to the teachings of Chuah. The suggestion to modify is to solve the problem of MPLS packets according to 'AAPA' have a Protocol ID field that does not indicate the format/type of the encapsulated packet (AAPA: [0005]). The benefit of performing the modification to AAPA is the current system of providing a label database for each component of the network switch (AAPA: [0005]) will no longer be needed.

Although the combination teaches a first and second network protocol type (IP, MAC) and label values in a first range indicate a first protocol type, the combination does not explicitly teach label values in a second range indicate a second network protocol type.

Gormley teaches multiple protocols of a second protocol type (MAC protocols, fixed assignment, random access, pure random access, controlled random access, col. 1 lines 26-30).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Chuah by modifying the protocol data field (Chuah: fig. 7 box 710) to have a range of values representing the different MAC protocols. This modification can be performed in software. The suggestion to modify is to solve the problem of MPLS packets according to 'AAPA' have a Protocol ID field that does not indicate the format/type of the encapsulated packet (AAPA: [0005]). The benefit of performing the modification to AAPA is the current system of providing a label database for each component of the network switch (AAPA: [0005]) will no longer be needed.

Regarding claim 6, AAPA teaches a network switch (mapping of data from the high-speed source to the multiple lower-speed links, [0003]). The examiner corresponds the applicant's network switch with the device in AAPA that is routing the data from the high-speed source to the multiple lower-speed links.

AAPA teaches an ingress interface having one or more ports to receive network traffic from one or more external sources (high-speed source, [0003]).

AAPA teaches an egress interface having one or more ports to transmit network traffic to one or more external destinations (multiple lower-speed links, [0003]).

AAPA teaches switching control circuitry (mapping of data, [0003]) coupled between the ingress interface and the egress interface, the switching control circuitry to analyze one or more labels in a header of a packet received via one of the ports of the ingress interface (Protocol ID field [0004]), the switching control circuitry to determine an underlying protocol format in which the data is formatted based on the values stored in the one or more labels (Protocol ID field identifies the packet as IP or encapsulated MAC frame [0004]), the switching control circuitry further to select a physical link from the egress port over which the packet is to be transmitted (packets for a given flow are transmitted on the same physical link,

[0003]) based on the one or more labels (Protocol ID field [0004]).

Although AAPA teaches MPLS ([0005]), the reference is silent on a MPLS data format in which a switching control circuitry may determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in one or more labels, the switching control circuitry to determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in the one or more labels.

Chuah teaches a MPLS data format in which a switching control circuitry may determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in one or more labels (fig. 3 box 340, col. 5 line 60- col. 6 line 9, fig. 7 box 710, col. 7 lines 61-65, col. 8 lines 14-18), the switching control circuitry to determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in the one or more labels (range of values, IP telephony, col. 9 lines 8-10).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by incorporating the protocol field of Chuah (fig. 3 box 340, fig. 7 box 710)

within the header of the transmitted MPLS packets, wherein label values in a first range indicate a first protocol type and label values in a second range indicate a second protocol type. This modification can be performed according to the teachings of Chuah. The suggestion to modify is to solve the problem of MPLS packets according to 'AAPA' have a Protocol ID field that does not indicate the format/type of the encapsulated packet (AAPA: [0005]). The benefit of performing the modification to AAPA is the current system of providing a label database for each component of the network switch (AAPA: [0005]) will no longer be needed.

Regarding claims 2, 7, 15, 18, 23, the first protocol type comprises an Internet Protocol 'IP' and the second protocol type comprises a Layer-2 MAC Protocol (AAPA: [0003]). Regarding claim 7, note the first and second ranges of values were addressed with respect to claim 6 (Chuah: range of values, IP telephony, col. 9 lines 8-10).

Regarding claims 3, 16, 19, and 24, performing a hashing function on header field values on header field values (AAPA: [0004], Protocol ID field), the hashing function and the header field values selected based on the one or more label values

(AAPA: [0003], different hashing functions used for different protocols, [0004], determination of hashing mechanism based on the Protocol ID field).

Regarding claims 4, 8, 20, and 25, performing a hash on one or more of a source IP address, a destination IP address, an IP type, a source port number, a destination port number, if the data carried by the packet is IP formatted (AAPA: [0004]).

Regarding claims 5, 9, 21, and 26, performing a hash on one or more of a destination MAC address, a source MAC address, if the data carried by the packet is Layer-2 MAC Protocol formatted (AAPA: [0004]).

4. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art 'AAPA' in view of Chuah (US 6,408,001), and further in view of Gormley (US 6,967,937), and Manchester (US 6,760,327).

Regarding claim 10, AAPA teaches a network switch (mapping of data from the high-speed source to the multiple lower-speed links, [0003]). The examiner corresponds the applicant's network

switch with the device in AAPA that is routing the data from the high- speed source to the multiple lower-speed links.

AAPA teaches an ingress interface having one or more ports to receive network traffic from one or more external sources (high-speed source, [0003]).

AAPA teaches an egress interface having one or more ports to transmit network traffic to one or more external destinations (multiple lower-speed links, [0003]).

AAPA teaches switching control circuitry (mapping of data, [0003]) coupled between the ingress interface and the egress interface, the switching control circuitry to analyze one or more labels in a header of a packet received via one of the ports of the ingress interface (Protocol ID field [0004]), the switching control circuitry to determine an underlying protocol format in which the data is formatted based on the values stored in the one or more labels (Protocol ID field identifies the packet as IP or encapsulated MAC frame [0004]), the switching control circuitry further to select a physical link from the egress port over which the packet is to be transmitted (packets for a given flow are transmitted on the same physical link, [0003]) based on the one or more labels (Protocol ID field [0004]).

Although AAPA teaches MPLS ([0005]), the reference is silent on a MPLS data format in which a switching control circuitry may determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in one or more labels, the switching control circuitry to determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in the one or more labels that correspond to a first plurality of values.

Chuah teaches a MPLS data format in which a switching control circuitry may determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in one or more labels (fig. 7 box 710, col. 8 lines 14-18), the switching control circuitry to determine an underlying protocol format in which the data of the MPLS encapsulated packet is formatted based on values stored in the one or more labels that correspond to a first plurality of values (range of values, IP telephony, col. 9 lines 8-10).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of AAPA by incorporating the protocol field of Chuah (fig. 7 box 710) within the header of the transmitted MPLS packets, wherein label values in a first range indicate a first protocol type. This modification can be

performed according to the teachings of Chuah. The suggestion to modify is to solve the problem of MPLS packets according to 'AAPA' have a Protocol ID field that does not indicate the format/type of the encapsulated packet (AAPA: [0005]). The benefit of performing the modification to AAPA is the current system of providing a label database for each component of the network switch (AAPA: [0005]) will no longer be needed.

Although the combination teaches a first and second network protocol type (IP, MAC) and label values in a first range indicate a first protocol type, the combination does not explicitly teach label values in a second range indicate a second network protocol type.

Gormley teaches multiple protocols of a second protocol type (MAC protocols, fixed assignment, random access, pure random access, controlled random access, col. 1 lines 26-30).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA and Chuah by modifying the protocol data field (Chuah: fig. 7 box 710) to have a range of values representing the different MAC protocols. This modification can be performed in software. The suggestion to modify is to solve the problem of MPLS packets according to 'AAPA' have a Protocol ID field that does not

indicate the format/type of the encapsulated packet (AAPA: [0005]). The benefit of performing the modification to AAPA is the current system of providing a label database for each component of the network switch (AAPA: [0005]) will no longer be needed.

Although the combination teaches an ingress and egress interface, the combination is silent on a backplane having multiple physical links coupled to the ingress interface and to the egress interface, the backplane to carry data between the ingress interface and the egress interface.

Manchester teaches a backplane having multiple physical links coupled to the ingress interface and to the egress interface, the backplane to carry data between the ingress interface and the egress interface (fig. 2 elements 46, col. 6 lines 10-15).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of AAPA, Chuah, and Gormley by using the backplane of Manchester to connect the ingress and egress interface. This modification can be performed according to the teachings of Manchester. The suggestion to modify is the backplane is rate adjustable (Manchester: col. 6 lines 10-15). Note, the system of the

combination of AAPA and Chuah has a high-speed ingress and multiple lower-speed egresses (AAPA: [0003]). The modification would benefit the system by providing a method for connecting the high-speed ingress to the multiple lower-speed egresses.

Regarding claim 11, the first protocol type comprises an Internet Protocol and the second protocol type comprises a Layer-2 MAC Protocol (AAPA: [0003]). Note the first and second ranges of values were addressed with respect to claim 10 (Chuah: range of values, IP telephony, col. 9 lines 8-10).

Regarding claim 12, performing a hash on one or more of a source IP address, a destination IP address, an IP type, a source port number, a destination port number, if the data carried by the packet is IP formatted (AAPA: [0004]).

Regarding claim 13, performing a hash on one or more of a destination MAC address, a source MAC address, if the data carried by the packet is Layer-2 MAC Protocol formatted (AAPA: [0004]).

Response to Arguments

5. Applicant's arguments filed 12/19/2005 have been fully considered but they are not persuasive.

Applicant contends that Chuah does not teach label values in a first range corresponding to a plurality of values of a first network protocol type (pg. 11 last paragraph). The examiner disagrees. As shown, Chuah teach a protocol label field to identify a network layer protocol (fig. 7 box 710, col. 8 lines 14-18) wherein the IP protocol is represented by a range of values (col. 9 lines 8-10). Regarding applicant's amendment that the limitation of label values in a second range corresponding to a second network protocol type, as shown above, Gormley teaches this limitation.

Regarding claim 10, the applicant's contend that the prior art of reference does not teach a range of values to indicate a first and second network protocol type (pg. 13 1st paragraph). The examiner disagrees for the reasons stated above.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is

reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (571) 272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronald Abelson
Examiner
Art Unit 2666

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2/10/06